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Science News-Letter
Reg. U. S. Pat. Off.
The Weekly Summary of Current Science
A Science Service Publication

Edited by Watson Davis
Vol. XII No. 325

10¢ a copy $5 a year
July 2, 1927

BOTANY

Poison Ivy Conquered by Chemicals

By Frank Thone

Poison ivy, the bane of the vacationist's existence, is with us again. Every motor trip, every picnic, every hike through the woods is apt to be followed by a blistered, red, intolerably itching casualty, or at least will have the best edge taken off its pleasure by the nervous anticipation that such ill consequences may follow a few hours after brushing against some seemingly innocent vine or bush. Remedies by the hundreds are recommended by doctors, by druggists, by old-fashioned housewives. Some of them work, some of them just serve to keep the patient in as cheerful a frame of mind as possible until the afflicted place gets well by itself. The handling of ivy poisoning, and of its kindred ailments oak and sumac poisoning, is still in a more or less chaotic condition.

Scientific order, however, is being brought out of it by the efforts of botanists, chemists and physicians, and now there are a few standard remedies, and what is even better, standard preventives, that anybody can have his corner druggist mix up in a few minutes. There is nothing "patent" or proprietary about them; they are all old familiar chemicals, and they don't cost much.

Potassium Permanganate A Remedy

The best remedy is axiomatically one that destroys the cause of the ailment, and it is for this reason that Dr. James F. Couch, of the U. S. Department of Agriculture, expert on poisonous plants, recommends the use of a solution of permanganate of potash to stop the itching, blistering irritation that follows contact with poison ivy, poison oak or poison sumac. Five per cent. of the compound in water is all the prescription your druggist will need. Bathe the afflicted skin freely with this solution, swabbing it on with a bit of cotton or soft cloth, and the poison will be oxidized and destroyed. This treatment leaves a brown stain on the skin, which can easily be removed in any one of a number of ways. A one per cent. solution of oxalic acid, Dr. Couch says, is the quickest means. But oxalic acid is a poison, so that if you are afraid of children getting hold of it, you may use instead a one per cent. solution of sodium bisulphite, or even just plain soap and water, though the latter is a bit slow in taking off the stain. If the skin has been very much broken by scratching or otherwise and is raw, the oxalic acid will cause a temporary stinging and soap and water is preferable for removing stains from such sensitive surfaces. If the skin is very tender the solution of potassium permanganate may be diluted with water before using.

Ferric Chloride A Preventive

The permanganate treatment is recommended only as a remedy for poisoning that has already taken place. Persons who know that they are likely to be poisoned may prevent the plants from harming them with a

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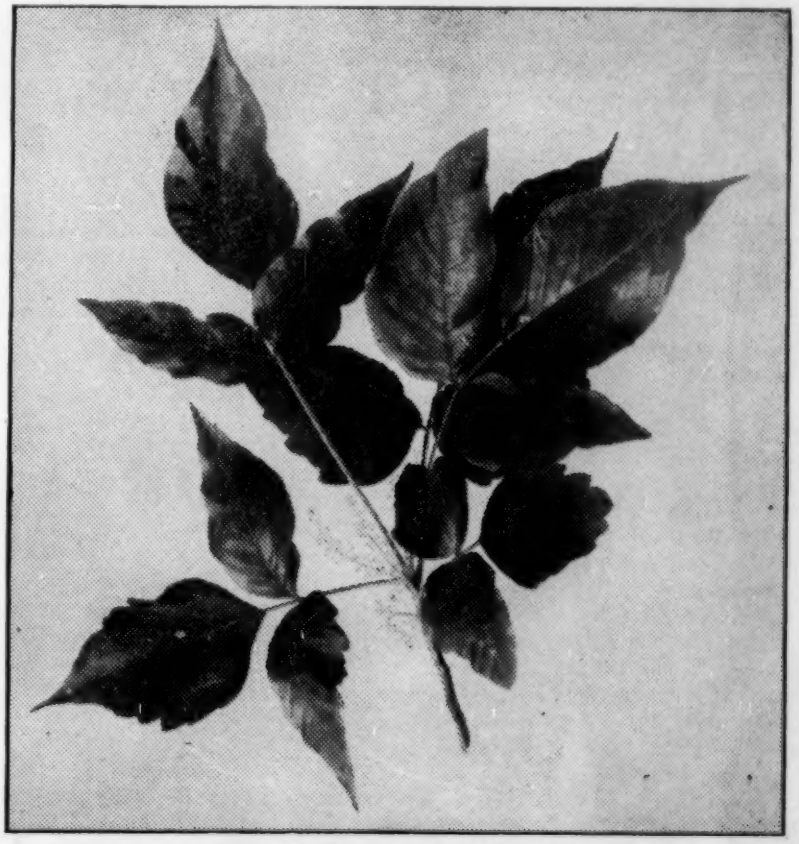

POISON IVY, or poison oak, can be identified by the leaves, which are always three-parted

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Poison Ivy

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wash devised by Dr. James B. McNair, of the Field Museum, Chicago. This consists of a five per cent. solution of ferric chloride in a fifty-fifty mixture of water and glycerin. This is to be washed on all exposed parts of the skin and allowed to dry there, before going where the dangerous weeds grow. The iron in the chemical combines with the poisonous principle of the ivy and changes it into a harmless, non-poisonous compound. This "iron cure" has been thoroughly tested by professors and students of the botany department at the University of Chicago. Their field trips take them through much poison ivy and poison sumac country, especially in the famous Lake Michigan dunes. Before they began to use Dr. McNair's treatment ivy and sumac poisonings were taken as a part of the natural hazards of a scientific course, but now they are rare occurrences.

Dr. McNair disclaims credit for the first discovery that a solution of an iron salt will help in the treatment of ivy poisoning. Indeed, it would be hard to think of something to put on an ivy-blistered skin that has not already been tried, for the more or less authentic remedies he lists in his monograph run literally into the hundreds. Common copperas, which is sulphate of iron, is used in some parts of the South, and iron salts were among the things suggested by physicians many years ago. But Dr. McNair was the first man who extracted the poisonous principle of the plants in a concentrated form, anaylzed it chemically, and found that when mixed with an iron solution it became insoluble and was no longer poisonous. His claim to recognition therefore rests on the fact that he first firmly established the "iron treatment" of ivy poisoning on a solidly scientific basis,

(*Continued on page* 9)

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Books are *reviewed in brief* as they are received from the publishers.

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SCIENCE NEWS-LETTER, The Weekly Summary of Current Science. Published by Science Service, Inc., the Institution for the Popularization of Science organized under the auspices of the National Academy of Sciences, the National Research Council and the American Association for the Advancement of Science.

Publication Office, 1918 Harford Ave., Baltimore, Md. Editorial and Executive Office, 21st and B Sts., N. W., Washington, D. C. Address all communications to Washington, D. C.

Entered as second class matter October 1, 1926, at the postoffice at Baltimore, Md., under the act of March 3, 1879. Established in mimeograph form March 13, 1922. Title registered as trade-mark, U. S. Patent Office.

Subscription rate—$5.00 a year postpaid. 10 cents a copy. Ten or more copies to same address, 6 cents a copy. Special reduced subscription rates are available to members of the American Association for the Advancement of Science.

Advertising rates furnished on application.

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Nature's Program for July

The material on this page is furnished by the Coordinating Council on Nature Activities.
This "Nature Calendar" is prepared monthly for Camp Fire Girls by the Cleveland Museum of Natural History. It is written by Dorothy A. Treat, assistant to Harold Madison, Curator of Education at the museum.

Great mullein stalks standing erect and tall like lighted green candles add a picturesque touch to stony pastures.

When turk's cap lilies bloom along hot, sunny lowland roads, follow the trail into a cool, moist wood, where the jewel weed grows. Pinch the green pods and watch them pop and throw their seeds.

On a wading expedition around the pond, one is likely to encounter a school of young horned pout accompanied by their parents. These odd-looking fish, with their waving horns, have no scales.

Many a bullfrog creaking in the pond at night falls a prey to families of minks and raccoons out in the swamp on frog hunts.

Sweet, juicy dewberries and big, ripe blackberries are ample compensation for stained fingers and purple tongues.

Young birds as big as their parents are flopping about on uncertain wings or cheeping in the grass while waiting to be fed.

Goldfinch fledglings are still in their thistledown nests, placed shoulder high in the bushes.

Myriads of "lightning bugs," or fireflies, make the woodlands shine like a distant city in the night. In June these fireflies were little glow-worms.

Science News-Letter, July 2, 1927

What About the Weather?

Weather has been one of the chief subjects of conversation among people of all ages and all climes, but in the words of America's great humorist, Mark Twain, "little has ever been done about it." Now, what can we do about the weather? Who has an idea? Study the weather, and how? Build a weather cock? Good! That sounds interesting. Every community center should have a weather cock, one that will actually work and point the direction of the wind under every circumstance. For freedom of movement and interference from too inquisitive hands, it is wise to place this on the roof of a building or on a high pole in the yard. It is very necessary that it be high enough to be free from the local gusts of wind and to be in the direct lane of whatever currents of air may be blowing.

Now, we shall have to keep several points in mind in building a weather cock. In the first place, it must turn horizontally on a pivot, passing through the center of gravity; second, one side of the pivot must present much greater surface to the wind than the other, and third, cross-pieces should be fitted on the support to mark the four cardinal points. The building of the weather cock offers a good opportunity to find out just what is meant by "center of gravity." After all these directions, we are ready to design weather cocks of different shapes and to work out unique plans for decorating these interesting articles. You may find helpful hints in books and magazines, for years ago weather cocks and weather vanes were quite common, particularly in New England villages. Later, an exhibit can be held of the finished and decorated articles.

We have now led up to the point where we can begin the study of the simple laws governing the forecasting of weather, starting with the direction the wind blows and its force of speed. A visit to a nearby weather station would be most interesting, will prompt lots of questions, arouse great interest and clear up many vague ideas. Our pioneer forefathers and the Indians determined the direction of the wind by such simple methods as smoke or dust or by the moistened thumb or forefinger held over the head. They also observed many weather signs which were thought quite dependable then and still may be found useful aids in determining what the weather is to be.

While we are on the general subject of weather, what about lightning rods? Have you noticed that there are more of them now than there were a few years ago? Did you ever see a lightning rod on a tree? What is a lightning rod good for, anyway? Did you ever hear an old-timer say: "Avoid the oak, it draws the stroke; crawl under the thorn, it will shield you from harm?"

One group of children can be responsible for checking up the weather each day, and another group can make a record of the prevailing winds, so, by the end of a few months, the relation of weather to prevailing winds may be noted quite accurately.

Other facts to be observed include the effect of the wind upon the clouds. Clouds traveling in different directions indicate that there are different currents of air. The effect of prevailing winds upon trees may be observed when on hikes. What is the difference in clouds and what do they mean? Suppose we get acquainted with the clouds, so that we can call them by names, just as we do the trees, for they are all named, and each name has a special meaning.

As this game of weather study goes on, we can expect to find a miniature weather station being constructed at the community center, with

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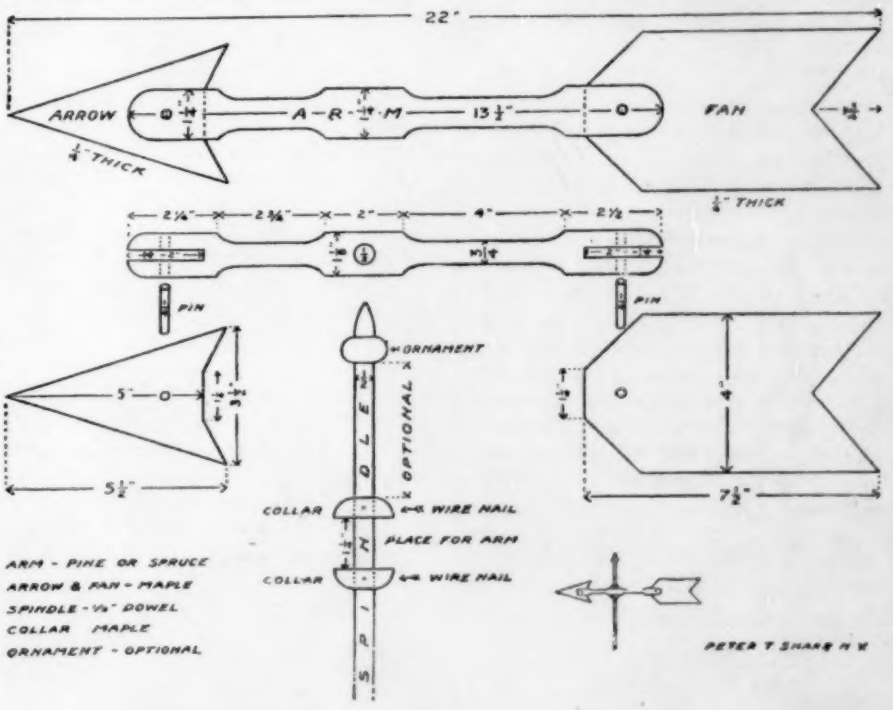

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portion is strictly prohibited.

L. Sidlo, Cleveland, Ohio.

Nature's Program for July

(*Continued from page 3*)

weather maps, charts and weather display flags, all worked out by members of the groups.

—By HARRY ALLEN,
Playground and Recreation Association of America.

Science News-Letter, July 2, 1927

Weather Vane for Camp

This weather vane is not so difficult to make as a first glance at the sketch might lead you to believe. I have suggested the kinds of wood that are suitable, but any other woods which may be at hand will answer. First, lay out the "Arm"—1¼ in. x 1⅛ in. x 13½ in. Plane the edges square. Mark the distances for the mortises, arrow, fan and holes, and also for the parts of the arm that are hollowed out. Make two saw cuts for the mortises and trim out with a chisel.

If you haven't a chisel, make one. Take a large cut spike or nail and grind or file it down. That will do very nicely. Care should be taken when boring the hole for the spindle to keep it plumb. Screws or nails may be substituted in place of the wooden pins which secure the arrow and fan to the arm. The arrow and fan should be laid out in pencil also, and carefully cut. A dowel or any round piece of wood will answer for the spindle. Hard wood is preferred for this, on account of the strain, when the wind blows hard. The collars, between which the arm turns, may be made from a spool. Fasten them on with small wire nails as indicated. The distance between the upper collar and ornament and the ornament itself, are optional. After putting the arrow together take off the sharp edges and smooth with sandpaper. Do not use any sandpaper until you are through using edge tools.

A weather vane half this size would give equally good results. It should be painted or varnished to preserve the wood.

—PETER T. SHARP,
Boy Scouts of America.

Science News-Letter, July 2, 1927

Realizing the need for a national program that would coordinate the nature activities of national groups working with young people, the American Museum of Natural History invited these volunteer organizations to form a council to be known as the Coordinating Council on Nature Activities for the purpose of teaching the growing generation, through nature activities, the value of all wild life and natural resources and their conservation.

The various organizations represented are as follows:

American Museum of Natural History, American Nature Study Society, Boy Scouts of America, Camp Directors Association, Camp Fire Girls, Inc., Girl Scouts, Inc., Pioneer Youth of America, Playground and Recreation Association, Woodcraft League of America.

Science News-Letter, July 2, 1927

MEMORANDUM

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BIOLOGY

NATURE RAMBLINGS

By FRANK THONE

Prairie Dogs

As you speed across the plains on your way to a vacation in the Rockies, you will see many "towns" of prairie dogs. These gregarious little rodents are fairly close relatives of the woodchuck or groundhog, and have no more to do with dogs than guinea pigs have to do with hogs. They have the same elementary social organization that many other gregarious animals have, the most outstanding feature of which is the posting of sentinels that warn the rest of the approach of danger by shrill whistles.

Prairie dogs are sources of unending entertainment to travelers, and especially to their children, but they are equally unending annoyances to ranchers. They have the insatiable nibbling appetites with which all rodents are endowed, which means that they do a lot of damage to crops. And on the range, where there is much riding to do, their innumerable burrows are always catching horses' hooves, sometimes causing broken bones for either horse or rider.

The old tales of prairie dogs, owls and rattlesnakes sharing the same burrows must be relegated (with a sigh, perhaps) to the realm of fable. Rattlesnakes do live in prairie-dog villages, but there is no evidence that they do more than occupy abandoned burrows. Perhaps they oust the original tenants, or even eat their families. Owls also take over empty prairie-dog apartments, but the little owl of the plains country is a burrower himself, and able to make his own dug-out.

Science News-Letter, July 2, 1927

The United States uses up about four-fifths of the world's gasoline production.

Nearly 40 per cent. of automobile fatalities happen to children under 15 years.

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ARCHÆOLOGY

Egyptians Clung to Gods

How middle class Egyptians really lived, and how they clung privately to the old picturesque family gods when one pharaoh insisted that the nation worship one god only, is shown by excavations at Tell-el-Amarna, perhaps the strangest city of ancient Egypt.

The Egyptian Exploration Society, excavating at Tell-el-Amarna, has been working particularly at the ruins of a suburb once occupied by everyday Egyptian citizens, whose customs are still much less understood than the glittering lives of the kings and nobles.

In a report of the excavations, by Henri Frankfort, he explains that the workmen's quarter was probably over-crowded. It consisted of a mass of small buildings, the best of which ran along two main roads, while others branched off along innumerable crooked pathways winding between granaries, chapels, and other buildings.

The plan of the better middle class homes called for a central room, serving as a reception hall, and behind this a corridor leading to the domestic apartments, so that the private life of the house was cut off from the official or public part. In one house an excellently preserved bedroom showed that the legs of the bed stood on conical stone supports to avoid sinking to the stone floor. Next was a bathroom with limestone bath and a runnel for carrying off the bath water.

The city which the suburbanites were helping to build and beautify was one of the most remarkable projects of Egyptian history. About 1370 B. C. the young Pharaoh Akhn-Aton broke away from the traditional religion of worshipping Amon and many lesser deities, and declared that Egypt should worship one god only, Aton, the Sun's Disk. The Sun God, he maintained, gave heat and light to the world and was the one great creator and protector of the earth and all its people. Akhn-Aton ordered all the temples of the old god closed, their priests turned out, and the names of the gods hacked from the splendid temples and shrines.

To break entirely with the old regime Akhn-Aton journeyed down the Nile from Thebes to a new site and built a capital on virgin soil, which he called the Horizon of Aton —the place now known as Tell-el-Amarna. Here, a palace, temples

(*Just turn the page*)

MEDICINE

Physical Types And Disease

Slender children, even healthy ones, should be given special opportunities for outdoor life and athletics, in order to safeguard them from developing into shut-in personalities, according to Dr. Clifford B. Farr, of the department for mental and nervous diseases of the Pennsylvania Hospital.

Dr. Farr, who spoke before the American Psychiatric Association, at its meeting in Cincinnati, said that recent investigations made by him confirm work of other scientists to the effect that certain physical types tend to go with certain types of personality and certain abnormal mental conditions.

Physical measurements show that the slender bodily type is apt to be a quiet, reflective person, who fails to express his emotions and ideas in action. The stocky, sturdily built individual is more likely to express himself in action and more likely to be normally interested in other people and affairs about him.

Qualities of physique and temperament are inherited in the main, Dr. Farr said. But surroundings and experiences may cause some traits to become over developed or to be stamped out.

Pronounced physical types may be sometimes noted even in childhood, he has found.

"I am convinced that attention to physique may be of considerable value in the mental hygiene of childhood," Dr. Farr stated.

Sturdily built children are apt to be sufficiently interested in sports and other social activities, but children of pronounced long, lean type should be encouraged to develop social traits, he said.

A clue to the puzzling question of why one individual who takes syphilis develops general paralysis, and becomes a helpless mental and physical wreck, while another syphilis patient escapes this catastrophe, was suggested by Dr. H. A. Bunker, of the New York Psychiatric Institute at Ward's Island.

Dr. Bunker has taken extensive body measurements of 100 men suffering from general paralysis, or paresis, he told the psychiatrists. He also measured 64 normal men for purposes of comparison.

"We believe we have worked out a certain number of anatomical differences between paretics and non-paretics which appear to be significant differences, that is, they appear

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CHRONOLOGY

Moses' Calendar Urged

Moses, trained in the secrets of the Egyptian pharaohs, was the greatest calendar reformer of history. The long lost calendar plan which he gave to the Children of Israel offers help to modern astronomers, mathematicians, and churchmen who are trying to straighten out our imperfect system of reckoning time. These are the conclusions of Dr. Charles F. Marvin, chief of the U. S. Weather Bureau, and Moses B. Cotsworth, well-known advocates of calendar reform.

When Moses set out with the Israelites on their forty years' journey in the wilderness, he was well versed in calendar-making lore known to the Egyptian priest-astronomers and to members of Pharaoh's household. There is evidence in the Bible, according to Dr. Marvin and Mr. Cotsworth, that Moses used this knowledge to make a calendar based on the sun so exact that workdays and Sabbaths came round on the same fixed dates each year, so long as the Mosaic calendar lasted.

Each month had 30 days, and at the end of the year the five days needed to make 365 were added. To make the year always begin on the Sabbath and to keep anniversaries from slipping along one day later in the week each year, as they do in our calendar, Moses established two Sabbaths together at Pentecost. To keep the calendar adjusted to the sun, a leap-week was inserted at the end of each 28 years.

"Leaders of humanity have struggled in vain during many centuries to reproduce such a perpetual calendar," the calendar experts point out. "Although better than any calendar employed by any subsequent nation, it ceased to be used or was misunderstood by later priests and has been lost during about 2,500 years. But the significant fact remains, that through traditional usage the Jews generally continue to observe two consecutive days at the Feast of Pentecost."

In ancient civilizations the calendar system was kept secret from the people, who depended on the priests to tell them when to plant important crops and when to harvest; thus, the close connection between the people and the temple and its religious ceremonies was increased. When the Babylonians slew the priests and burned their archives in the destruction of Jerusalem in 587 B. C., the Mosaic calendar was lost, and the captives turned to the Babylonian sys-

(*Just turn the page*)

Moses Calendar

(*Continued from page* 5)

tem of reckoning time, based on the moon.

"Moses is the only calendar reformer known in history who succeeded in maintaining equal months, while fixing the dates for all seventh-day Sabbaths and festivals to recur on their same respective dates in every year," Dr. Marvin and Mr. Cotsworth find.

"The scriptures commanded the insertion of the extra day at Pentecost as an eighth day extension of the preceding week. Therefore, neither Jews, Christians, nor Mohammedans now seem to have reasonable grounds to oppose any action by the Calendar Committee appointed by the League of Nations towards recommending that the last day in December be named 'Year-day', and be inserted as an International Sabbath ending the fifty-second week in every year, with Leap-day, in like manner, inserted in the last week of June in Leap years."

The proposed calendar system which these two calendar reformers advocate, would have thirteen months of 28 days each. The League of Nations committee which has been considering plans for improving the calendar system did not, in its recent report, express a definite preference for this system or for the alternate proposal of using 12 months each 30 or 31 days long. Both plans have their advantage, which the committee pointed out.

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Physical Types

(*Continued from page* 5)

not to be merely chance differences," said Dr. Bunker.

"It would seem, in short, that syphilitics who develop general paralysis are in some way a different kind of people from syphilitics who do not. What is here noteworthy is that one of the differences between them should consist in certain purely anatomical features, even though it be true that these anatomical differences are but an outward expression of, or merely coordinated with, a more deep-seated and fundamental difference, the full nature of which remains as yet obscure."

Science News-Letter, July 2, 1927

MEMORANDUM

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Egyptian Gods

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to Aton, homes, and many fine tomb-chapels for wealthy followers of the king were erected by armies of workmen.

The Sun Disk was worshipped throughout the city officially, as the discovery of numerous small shrines shows. These shrines, bearing the effigies of the royal family engaged in worshipping Aton, are scattered at points along the roadside, and in courtyards. But despite the Pharaoh's decree, in their homes the common people clung to the familiar deities to whom they appealed in the distresses of daily life—the god Bes, patron of pleasure, the Cow-eared Hathor, and the Hippopotamus Tauert, guardian of mothers.

Akhn-Aton's religious revolution was doomed to failure. At his death his daughter's husband, Tut-ankh-Aton, succeeded to the throne. But the power and plotting of dissatisfied priests and officials who preferred the old regime were too much for the young pharaoh. He went back to the worship of Amon and the rest of the gods, changed his named to Tut-ankh-Amon, and finally abandoned the beautiful new capital and returned to Thebes, with his court.

Discovery of a red crystalline sandstone head of the youngest of Akhn-Aton's daughters shows the same peculiar shape which has become familiar in portraits and the mummy of her father. The view that this peculiarly shaped head was not due to disease, as was at first suggested in the case of Akhn-Aton, but that it was a family characteristic, is supported by the new find, and also by the fact that the head of Tut-ankh-Amon is similar. So close is the resemblance that it is considered possible that Tut-ankh-Amon was not only the son-in-law but also the son of Akhn-Aton.

Science News-Letter, July 2, 1927

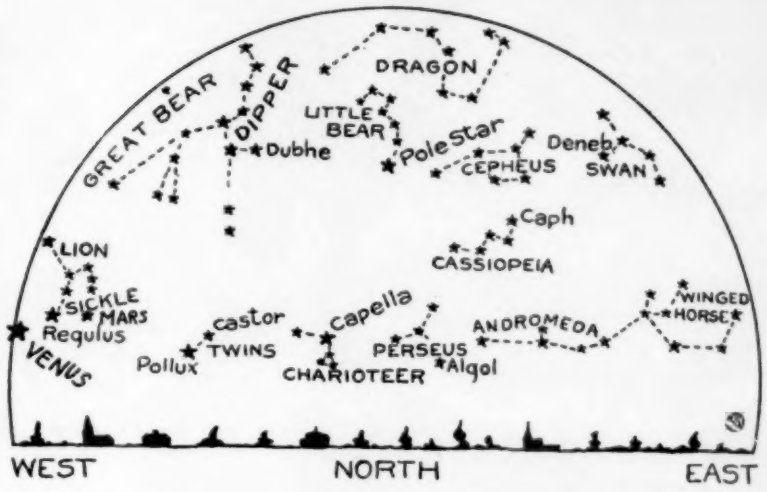
There are vast deserts out in the ocean in which no plant or animal life is found.

Four tons of worn out paper money are returned to the Treasury Department every day.

Twelve colleges in this country now give mental hygiene instruction and advice to their students.

Raising camphor trees is being tried out in Algeria.

Sun Farthest Now, Despite Hot Weather



By James Stokley

With July, in most parts of our country, comes hot weather; the noonday sun seems hotter than ever, and we long for the coolness of January, But, surprising though it may seem. the earth is now about three million miles farther from the sun than it was in the first month of the year. On Sunday, July 3, at two o'clock in the afternoon, eastern standard time, the earth is in aphelion, which is the name that astronomers give to the part of its orbit when the greatest distance separates it from the sun. Then, the two bodies are 94,454,200 miles from each other. On the second of January they were in perihelion, or closest together. At that time, while many people were complaining about the cold weather, the sun was only 91,346,100 miles from us.

Less Heat Now From Sun

At the great distance that the sun is from the earth at any time, three million miles doesn't make a great deal of difference, but the light and heat varies, not as the distance of the source, but as the square of the distance. That is, if you have two 25 candlepower electric lamps, one two feet away, the other four, the closer one will not give twice as much light on your face as the distant one, but four times as much. The intensity varies as the difference between four and sixteen, not as between two and four. The intensity of the sunlight in January, if we figure only from the distance, should be about seven per cent. more than it is now.

Then, one asks, why is it hotter now, if the intensity of the light and heat from the sun is about seven per cent. less than it was in January? The answer is that it is seven per cent. less only when the sun is overhead in both cases. In January, the sun is nearer, but it is far to the south, the light and heat rays strike the earth at a low angle. Imagine a beam of sunlight a yard square. When it strikes the earth at an angle of 30 degrees, about what it would be at noon in winter, the yard square beam will cover an area of two square yards, so that the heating effect is only half of what it would be if the sun were overhead.

Summer Sunshine Concentrated

But in summer, the sun is higher, about 70 degrees at noon in the United States, and then the yard square beam will cover an area of about one and a tenth square yards of the earth's surface, so we get nearly twice the heating effect that we do in winter. With nearly a hundred per cent. greater heat thus coming from the sun to the earth in summer on this account, the seven per cent. difference due to the greater distance of the sun has little effect.

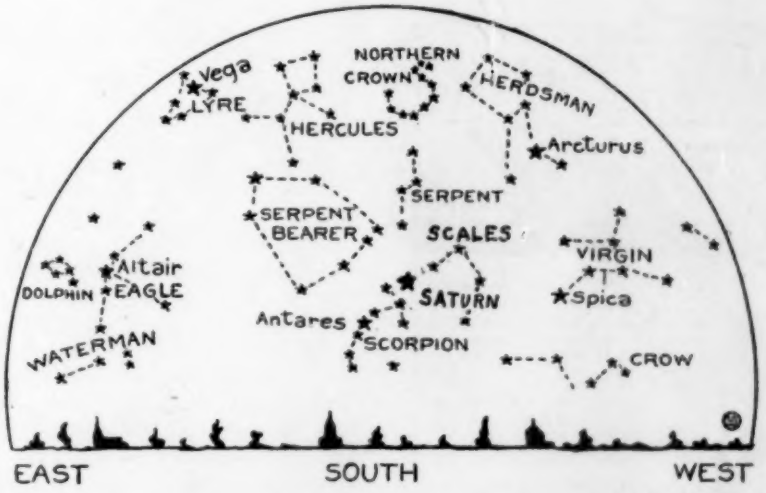
However, there are still other factors which make for hot weather, or else the hottest weather would come in June, when the sun is farthest north, and the coldest in December, when it is farthest south. Actually, as everyone knows, the hottest weather occurs a month or so after the summer solstice, when the sun is really giving us the most heat.

This is due to the fact that the earth holds its heat for a time. It is always absorbing a certain amount of heat from the sun, in winter and summer, and likewise, at all times of the year, it is radiating a certain amount of heat out into space. During the early winter, it gives off heat faster than it takes it in from the sun, and so the average temperature becomes less. But, during the spring, it takes it in faster than it gives it off, and the thermometer starts to go up. Then comes June, the sun begins to calm down a little in the quantity of heat that it gives us, but the earth has been storing up heat all spring, therefore, it doesn't start giving off excess heat until about August, and not until then does the average temperature begin to go down.

Venus In Evening Sky

In this warm weather, the evenings are welcome, and there are plenty of interesting objects in the evening skies to attract the amateur star gazer. The most prominent thing in the evening sky, except the moon, of course,

(*Just turn the page*)



Hold these maps in front of you and face north or south. They will then show stars as they appear to you in the sky.

July Skies

(*Continued from page 7*)

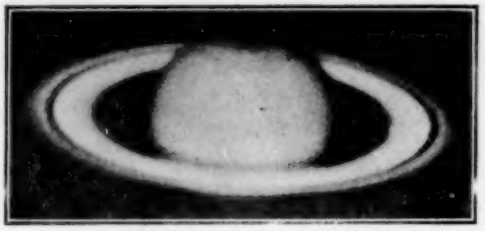
is the planet Venus. On the fifth of July this planet will engage in a little show of its own when in comes close to Regulus, the bright star at the end of the handle of the "Sickle" in Leo, the lion. Regulus is almost directly west about 8:30 p. m., at this time, and Venus will be to the north a distance about equal to the diameter of the full moon. Though Regulus is a first magnitude star, Venus will be a great deal brighter.

Mars, one of the two other naked eye planets now visible in the evening sky, is also in this part of the heavens, and on the twenty-third of the month it will also be near Regulus, but about twice the diameter of the moon away. Mars, however, will be about a magnitude fainter than Regulus.

Saturn is probably the most interesting of the planets now in the evening sky, though to appreciate fully its features one needs a small telescope. Saturn is now in the southern sky, directly south about 8:30 p. m. Most conspicuous about it is the famous system of rings, shown in the illustration in a photograph made at the Mt. Wilson Observatory. These rings were first noticed by Galileo, who, in 1610, was the first man to examine the heavens with a telescope, but he did not realize just what they were. It was not until 1656 that Huyghens, the Dutch astronomer, and inventor of the pendulum clock, discovered their true nature.

Saturn's Giant Rings

The rings are enormous things. The planet itself is about 74,100 miles in diameter, but the outermost ring is 171,000 miles from one edge to the opposite, while the innermost ring is 88,100 miles in its internal diameter. To a person on the planet's surface at the equator, therefore, the nearest part of the ring system would be about 7,000 miles overhead, nearly a distance great enough to permit the earth to pass through them.



SATURN—the ringed planet

Yet despite the great diameter of the rings, they are very thin. Their thickness is not over 10 miles, so thin that if we were to make a model of them to the scale of 10,000 miles to the inch, which would make the outer ring about 17 inches in diameter, the thinnest tissue paper would be too thick to represent them properly.

As Saturn reappears in the evening sky year after year, the rings take on a different aspect. Sometimes they seem to be spread out, much more nearly circular than at other times, when they are very thin and may even disappear for a time. This is a result of the planet's revolution in its orbit, and the fact that the plane of the rings is not the same as the plane in which the planet itself moves. Sometimes the earth is directly in line with the rings; this happened in 1921. when the rings appeared at best as a thin line. Since then, however, the rings have been spreading out until now they are nearly as far open as in the illustration, while by 1936 they will again be seen on edge.

Planet Occulted

On July 10, the moon, which will than be in a gibbous phase between first quarter and full moon, will come close to Saturn, finally passing in front of it. This is called occultation. At 4:30 p. m., eastern standard time, on the 10th, which is a Sunday, despite the blue laws in some parts of the country, the planet will disappear behind the lunar disc. As this is several hours before sunset, it will not be possible to see Saturn with the naked eye, though the moon will be easily visible, in the southeast. However, with a small telescope, the planet should be picked up as it vanishes. Then, at 5:30 p. m., eastern standard time, comes the emersion, when the planet reappears on the opposite side of the moon.

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Eclipse Cloudy In Norway

Partial success of the observations of the total eclipse of the sun of June 29 in England and the failure of expeditions to Norway because of clouds have again proven the fallibility of advance weather prospects. The English chances of clear weather were estimated months ago as only one in three, while in Norway, they were said to be even. Yet the eclipse was seen in England, partly through light clouds, while in Norway thick clouds completely obscured the view. Dr. S. A. Mitchell, director of the McCormick-Chaloner expedition to Norway, the only scientific party from the United States, was unable to make any observations. This was his seventh eclipse, yet the magic number failed to bring him luck.

Dr. L. J. Comrie, of the British Nautical Almanac Office, who made the official advance calculations of the path of the eclipse over Britain, was at Southport, near Liverpool. He reports that the eclipse was seen from there through thin clouds, which concealed the faint outer extensions of the corona that were so noticeable at the eclipse of January, 1925, visible in New York. The corona is the outermost part of the sun, consisting at least partly of fine "dust" particles, and can only be seen at the time of a total eclipse. However, the bright inner corona, and the ring of the chromosphere, the sun's outer layer, or "atmosphere," could be seen behind the black disc of the moon. A large prominence, or red flame of hydrogen, was observed from the upper part of the sun.

Gerald Merton, British astronomer and former war aviator, observed the eclipse from his own airplane, and succeeded in rising above two layers of clouds, at 4,000 and 9,000 feet altitude. He flew at 10,000 feet and while another layer of clouds was 5,000 feet above him, he had a fair view of the phenomenon. He also observed the shadow of the moon sweeping across the clouds beneath him.

At Giggleswick, where Sir Frank Dyson, astronomer royal, located his instruments, a rift in the clouds appeared opportunely a few minutes before the total eclipse commenced. It was observed with a clear sky from that point. Even this was not as narrow an escape as that of a party from the Lick Observatory to Goldendale, Washington, to observe the eclipse in June, 1918.

POISON IVY often forms dense masses of shining foliage, which are really quite attractive to look at—from a distance

Poison Ivy

(*Continued from page* 2)

especially as regards its value as a preventive.

Dr. McNair has also worked out a modification of the paraffin treatment for burns which is now used in hospitals for the cure of extreme cases of poisoning, where wide areas of the skin are killed and have to be grown anew. But this is something that can be handled effectively only by medical men, and so has no place in the family medicine chest or the field first-aid kit.

Lucky Ones Are Immune

Poison ivy is more of a terror than it has cause to be, for all scientists who have studied the subject agree that many persons, perhaps even a majority, are more or less immune to it. No one, says Dr. Couch, is absolutely ivy-proof; he can raise blisters with the squeezed-out sap of the plant on the skin of any one hardy (or foolish) enough to volunteer for such an experiment. But many of these same persons can walk around in it all day, or pull it up the handfuls, with no ill effect whatever. But this should not encourage these lucky ones to be too reckless. Immunity to poison ivy does not always stand at the same level, but apparently suffers occasional let-downs, and if one happens to get poisoned during one of these low spells he never recovers his lost immunity, but remains susceptible for the rest of his life.

Dr. Couch states also that ivy poisoning is really a double effect. The blistering and itching are caused, he says, by the substance which Dr. McNair isolated and named "lobinol," and the swelling and reddening of the afflicted parts, together with the general "all-gone" sick sensation that so seriously affects many poison-ivy patients, are what is known as an "allergic" reaction, more or less analogous to most kinds of hay fever, and are probably due to some other poisonous substance not yet identified. Persons who are susceptible to the blistering effects of the ivy are often quite immune to this allergic reaction. For this part of the poisoning effects the various chemical treatments recommended for the blisters and itching are of no use; all the patient can do is go to bed and keep quiet until he feels better.

Easy To Recognize

But after all has been said about remedies and preventives and the fortunate immunity of many persons, the best prescription for poison ivy and its relatives is to know them when you see them, and let them severely alone. Poison ivy and its West Coast relative, poison oak, are very much alike in general appearance. They grow either as vines, climbing fences and trees, or as erect, slender-stemmed shrubs from underground rootstocks, and are distinguished by their glossy green, three-parted leaves, which are not like those of any other common vine or shrub. Their flowers, which are in bloom during late spring and early summer, are plumy little clusters of tiny greenish bloom. During this flowering season the plant is said to be especially venomous. The flowers are succeeded by pale white little berries, which persist throughout the winter, and are often eaten by birds, with relish and with no apparent ill effects. This of course helps to spread the plant.

The vine form sometimes attains huge proportions. In the "high hammock" woods of the South poison ivy vines a foot through are sometimes found, and six-inch vines are common. In the North, a three-inch vine would rate as a big one. The poison ivy vine can be distinguished easily from the beautiful and harmless woodbine or Virginia creeper partly because it throws out innumerable roots that cling to the tree trunk, while the woodbine clings by means of tendrils and partly by its three-parted leaf as contrasted with the woodbine's five-parted one. There are two old sayings that embody these botanical points: "Leaflets three; let it be," and "Five fingers may handle five leaves." In some parts of the East poison ivy is called poison oak, but the latter title belongs by rights to the similar plant of the wooded foothills of the western mountains.

First Settlers Knew It

Poison ivy is a hundred per cent. American plant. It is unknown in Europe in a wild state, so when the first colonists encountered it—and got rather the worse of the encounter—it caused some comment. It plagued the settlers at Jamestown, and Captain John Smith knew it both there and in the British island possessions farther south. He noted in his journal, accurately enough, too:

"The poisonous weed, being in shape but little different from our English yvie; but being touched causeth reddness, itchinge, and lastly blysters, the which howsoever, after a while they passe awaye of themselves without further harme; yet because for the time they are somewhat painefull, and in aspect dangerous, it hath gotten itselfe an ill name, although questionless of no very ill nature."

(*Just turn the page*)

Poison Ivy

(*Continued from page 9*)

Less frequently encountered than poison ivy, but of a more "ill nature," as Captain John Smith put it, is the poison sumac. This looks much like the common sumac that is such a fine ornament on the roadsides, but is clearly distinguishable by several marks: it always grows in or near acid-water bogs, whereas the common sumac is an upland plant; its fruits are smooth, round white berries that hang in drooping loose bunches, while the ornamental sumac's fruits are small and rough, deep brown or black in color, and stand erect in a close pyramidal cluster; finally, the bark of poison sumac is pallid gray, while that of the ordinary sumac is more brownish, or in the case of the staghorn sumac, very hairy and sooty-black. The poison sumac is reported to be much worse in its effects than the poison ivy, but to be dangerous to far fewer people.

Poison sumac is an accurate name, for the plant is really a species of sumac. Poison ivy and poison oak are both misnomers, for the one is not an ivy and the other not an oak, but both are sumacs also, though they have only three parts to a leaf. They are not the only poisonous sumacs in the world, for the Asiatic plants that yield shellac are also sumacs, and their sap is poisonous, sometimes seriously so. When the mah-jongg craze swept the country a couple of years ago it carried an epidemic of skin rashes in its wake, and it is probable that the lacquer on the bamboo pieces was to blame. A tale is also told of a zealous customs inspector who opened a heavy tin can brought in by a Chinese. The Oriental importer stated that the sticky black stuff in it was shellac, but the inspector suspected opium. He took it to the laboratory and analyzed it—and for the next month was laid up with one of the worst cases on record of ivy poisoning!

Science News-Letter, July 2, 1927

The Romans heated houses by forcing hot air under the floors and through flues in the walls.

The hourglass spider of the South and West is one of the few spiders in this country dangerous to man.

There are probably as many rats as people in this country, and each rat averages $2 damage a year.

A good grade of paper can be made out of worn out paper money, the Bureau of Standards has found.

Whether the Alsatian police dog is descended from a wolf crossed with a domestic dog or not is being warmly debated by Chinese dog owners.

POISON SUMAC looks much like ordinary sumac, but is distinguished by its drooping bunches of pale berries

MEMORANDUM

This blank space serves a dual purpose. It allows you to clip out the article on the reverse of this page without destroying any other article. It can also be used for notes and the recording of your own observations.

PSYCHOLOGY

Fake Psychologists

Pseudo-psychologists, who promise, like fairy godmothers, to turn everyday human beings into fascinating personalities or into great financial successes, are creating large groups of discontented individuals, according to Dr. E. A. Shaw and George E. Gardner, of the Harvard University Psycho-Educational Clinic.

These two clinical psychologists state in a report to the National Committee for Mental Hygiene that "character analysts" and "practical psychologists" are responsible for many of the dissatisfied, badly adjusted cases that come to the Harvard Clinic. Gilt edge promises made to all, irrespective of ability and training, lead individuals to false hopes and discontent with kinds of work for which they are suited, it is stated. And repeated failures to attain the heights so glowingly described as well within reach can lead an individual to serious mental upsets.

The psychological quack, half informed concerning scientific psychological principles, undertakes in a conference or by lectures, and for no small fee, to advise men and women about their mental and vocational ills, the two Harvard psychologists explain.

"These men, we maintain — and their numbers are growing day by day—are a detriment to the mental health of the community," the psychologists state. "In their doctrines and platitudes there is just enough of truth and of falsity to make them dangerous."

One serious result of the situation pointed out is that the work of the "analysts" becomes confused in the eyes of the public with the work of well trained vocational advisors and directors of personality clinics who conscientiously and carefully study the individual who comes to them for help and who advise him according to his real possibilities.

Science News-Letter, July 2, 1927

PSYCHOLOGY

The Social Smile

How the sweet social smile differs from a real spontaneous smile of pleasure has been made clear through the peculiar circumstance of studying patients with brain injuries, according to Dr. G. H. Monrad Krohn, professor of medicine at the University of Oslo.

Dr. Krohn, who is now visiting medical centers in the United States, has found that in cases of injury to the motor centers of the brain the patients have difficulty in voluntarily controlling the muscles and nerves of their faces. True emotional movements, however, are well preserved, even exaggerated. Slow motion picture records revealed that, because of their injuries, when these patients express pleasure they may smile earlier and more extensively on the side of the face controlled by the injured side of the brain.

The emotional movements of the spontaneous smile are due to an entirely different kind of nervous mechanism from those of the voluntary or social smile. The cases studied by Dr. Krohn present evidence to show that when one type of smile mechanism is in action the other, so to speak, is shut off.

Some normal persons are unable to control the nerve mechanism used in producing a frown voluntarily, Dr. Krohn has found. When asked to frown, they are unable to do so, even though they can frown readily when angry or disappointed.

Science News-Letter, July 2, 1927

EVOLUTION

Scopes Goes to Venezuela

John T. Scopes, central figure in the famous Dayton evolution trial of two summers ago, is now on his way to Venezuela to look over potential oil lands for one of the large petroleum companies. The fund raised by friends of science throughout the country after his trial has sufficed to give him two years of graduate work in geology at the University of Chicago, where he has acquitted himself with great credit and has been popular with his classmates. He states that after two years in the field he will have saved enough money to put him over the remainder of the road to the doctorate very comfortably. He anticipates returning to Chicago as soon as he is able.

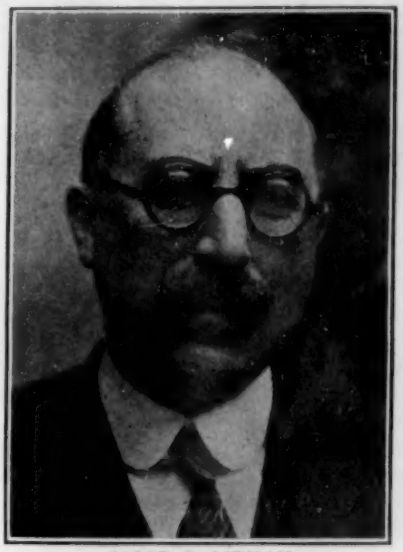
Science News-Letter, July 2, 1927

Over half of the worst insect pests in the United States have been imported from foreign countries.

The pack carried by the United States infantry soldier weighs 51 pounds and is the lightest used by any army.

A glue which retains considerable strength when wet has been produced by the United States Forest Products Laboratory.

SOIL SCIENCE



JACOB G. LIPMAN

Ein genialer Mensch

The Germans have a fine adjective, *genial.* It combines some degree of the meanings of its English cognates "genius" and "genial," without the adultatory connotation that attaches to the first and the faint odor of depreciation that attends the second.

Dr. Lipman himself would be the first to deny claim to distinction as *ein genialer Mensch,* but his colleagues from all the world, who have just concluded at Washington the First International Congress of Soil Science, would without question confirm the suggestion with a shout. In organizing this congress, in securing the necessary financial backing, in administering the thousand-and-one preliminary businesses, in finding a satisfactory linguistic way out of a modern polyglot Babel, and at last in presiding urbanely at its sessions, Dr. Lipman showed himself possessed of that combination which will more and more mark the captains of the future: thorough command of a science, good administrative capacity, and a capacity for easy human contact.

Dr. Lipman's life has been an excellent training for carrying on to success just such activities as this International Congress. He was born in Russia, but of German-speaking stock. Emigrating to America, he finished his formal education with degrees from Rutgers and Cornell. Most of his scientific life has been bound up with the former institution, where he is now dean of agriculture and director of the New Jersey state experiment station. He has been a prolific writer on agricultural science, and is very active also as editor of a number of scientific journals.

Science News-Letter, July 2, 1927

How to Use Key-Word Feature of News-Letter

In order to aid in catching the items that concern you and to facilitate clipping and filing, a key word in small capitals has been printed on the right of the line above each article. The key words used fit into any system of classification, whether it be a straight alphabetical file, a system of your own devising, the Library of Congress classification or the Dewey system.

Note that you can slip out any article without fear of damaging another article in which you might be interested, since editorial matter printed on the right-hand pages is backed by advertising, standing matter or a continuation of the article on the other side.

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HC Economic history and conditions. National production.
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SH Fish culture and fisheries.
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TA Engineering. General.
TC Hydraulic engineering.
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TE Roads and pavements.
TF Railroads.
TG Bridges and roofs.
TH Building construction.
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110 Metaphysics
120 Special metaphysical topics
130 Mind and body
140 Philosophical systems
150 Mental faculties. Psychology
160 Logic
170 Ethics
180 Ancient philosophers
190 Modern philosophers
200 RELIGION—
210 Natural theology
220 Bible
230 Doctrinal. Dogmatics. Theology
240 Devotional. Practical
250 Homiletic. Pastoral. Parochial
260 Church. Institutions. Work
270 Religious history
280 Christian churches and sects
290 Ethnic. Non-Christian
300 SOCIOLOGY—
310 Statistics
320 Political science
330 Political economy
340 Law
350 Administration
360 Associations. Institutions
370 Education
380 Commerce. Communication
390 Customs. Costumes. Folklore
400 PHILOLOGY—
410 Comparative
420 English
430 German
440 French
450 Italian
460 Spanish
470 Latin
480 Greek
490 Minor Languages
500 NATURAL SCIENCE—
510 Mathematics
520 Astronomy
530 Physics
540 Chemistry
550 Geology
560 Paleontology
570 Biology
580 Botany
590 Zoology
600 USEFUL ARTS—
610 Medicine
620 Engineering
630 Agriculture
640 Domestic economy
650 Communication. Commerce
660 Chemical technology
670 Manufactures
680 Mechanic trades
690 Building
700 FINE ARTS—
710 Landscape gardening
720 Architecture
730 Sculpture
740 Drawing. Decoration. Design
750 Painting
760 Engraving
770 Photography
780 Music
790 Amusement
800 LITERATURE—
810 American
820 English
830 German
840 French
850 Italian
860 Spanish
870 Latin
880 Greek
890 Minor languages
900 HISTORY—
910 Geography and travels
920 Biography
930 Ancient history
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First Glances at New Books

KERNELS OF THE UNIVERSE—C. B. Bazzoni—*Doran* ($1.25). "'What is the use of a book,' thought Alice, 'without pictures or conversations?'" Plenty of scientific books have pictures, but since the days of Galileo conversation has been lost from books on science. In this little volume the author invokes the good old dialog method, with a clergyman, a business man and a physicist as the *dramatis personae*. The physicist tells the others of atoms and the electrons of which they are made, of the radiations they emit, of the quantum theory and of modern ideas of where and how the atoms originate and what finally becomes of them. And best of all, it is all given in the easy conversational style which makes it interesting reading. The book is the third of "The Humanizing of Knowledge Series," intended, we learn from the introduction, "to present to the average man, for his delight as well as his information, great but little understood truths, the fruit of scholarly research." In this book, at least, their aim has been ably fulfilled.

Science News-Letter, July 2, 1927

THE CASE OF PATIENCE WORTH, A Critical Study of Certain Unusual Phenomena—Walter Franklin Prince—*Boston Society for Psychic Research*. Whatever may be the reader's own solution of the Patience Worth puzzle, he will find much of interest in this new volume of material and comment. The facts set forth are still awaiting an exact scientific explanation of the psychological mechanism by which Mrs. Pearl Curran, a woman with no recognized mental gifts, suddenly dictates such poems and novels in archaic dialects. The author of this critical study ends his book by saying: "Either our concept of what we call the subconscious must be radically altered, so as to include potencies of which we hitherto have had no knowledge, or else some cause operating through but not originating in the subconsciousness of Mrs. Curran must be acknowledged."

Science News-Letter, July 2, 1927

THE ZEISS WORKS—Felix Auerbach—*Foyle (London)* ($4.50). The fascinating story of the partnership between Carl Zeiss and Ernst Abbe that led to an institution that is now more than a business firm and which has been responsible for many of the great advances in optical science.

Science News-Letter, July 2, 1927

Air Lines to Span Nation

By August 1 anyone will be able to fly from New York to San Francisco with the speed of air mail. By July 1 the western half of this route from Chicago to San Francisco will be open. Later airliners will ply between New York and Miami, via Atlanta.

America will then begin to rival Europe's passenger airlines just as it now excels in air mail routes. The New York-San Francisco route will be the world's longest airplane passenger line.

Information obtained from Major Ernest L. Jones of the Department of Commerce's new organization controlling commercial aviation indicates that these important advances in aviation will occur.

The cost of transcontinental flying will be about fifteen cents a mile or less than $400.00 for the 2,500 mile trip. Rail fare and Pullman for the same trip cost about $140. The fastest rail time from coast to coast is slightly less than four days (87 to 96 hours) while the air time will be about a day and a third (31 to 32 hours). Thus nearly three days of time will be saved by traveling by air.

Those who prefer wings to wheels can travel now from Boston to New York for $30.00. The air time tables are out with directions for passengers. The table looks like a railroad one with arriving and leaving times for the cities en route.

Other passenger air routes now running are:

The Colorado Airways, Inc., operating from Cheyenne to Pueblo, $45 round trip.

The Western Air Express, 589 miles from Salt Lake City to Los Angeles, $150 round trip.

The Pacific Air Transport from Seattle to Los Angeles, 1,073 miles for $132 one way.

The Stout Air Services, between Detroit and Grand Rapids, is the only company issuing commutation books of ten trips. These books are to be had for $160.

The Northwest Airways will also begin service from Chicago to Minneapolis-St. Paul in the immediate future, with a round trip ticket rate of $75.

The following airways are now completely lighted: New York to Boston, St. Louis to Chicago and the transcontinental route from New York to Salt Lake. The following routes will be lighted this year: Dallas to Chicago and Cheyenne to Pueblo (nearly finished); Salt Lake to Los Angeles; Salt Lake to San Francisco; Pasco, Washington, to Elko, Nevada; Seattle to Los Angeles; Minneapolis, St. Paul to Chicago; Detroit to Cleveland and New York to Atlanta. The New York-Chicago route is now the only regular night mail service.

The large expansion of aerial passenger lines will occur when the Post Office department relinquishes actual operation of the air mail lines and lets them out on contract. The government will be entirely out of the business of operating the air mail routes on August 1. Private air mail contractors will be able to carry passengers and express along with mail just as the railroads do.

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PSYCHIATRY

Emotions Foretell Diseases

Children whose early years are shadowed by pronounced and frequent attacks of rage or fear may be getting a start directly toward certain types of mental diseases, according to Dr. Henry S. Sullivan, of the Sheppard and Enoch Pratt Hospital, here.

"Some young children are subjected to such experiences that they react to rage more than to any other emotion," Dr. Sullivan has found. "These tend to grow up to become violent, aggressive and epileptic types.

"Other children have all their needs anticipated, and their chief emotion is self-satisfaction. These are not fitted to meet life, and often develop obsessional neuroses quite early.

"And lastly, a great number of infants are taught more of fear than anything else, and in these we see a sort of maladjustment known as defense reactions, by which they set up barriers between themselves and the world. Dementia precox patients belong to this class."

Grave mental disorders of the dementia precox type are maladjustments to a social environment, and are not in any sense the outcome of hereditary factors, Dr. Sullivan states.

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Anniversaries of Science

July 4, 1828—The first rail of the first steam railroad opened in the United States was laid.

The first American railroad to be constructed with the intention of using steam locomotives only, was the South Carolina Railroad, commenced in 1827; but the first road to be opened was the Baltimore & Ohio, which was partly put in operation for service in 1830. Their first rail was laid on July 4, 1828, by Charles Carroll, of Carrollton, the only then surviving signer of the Declaration of Independence.

—Bannard and Kaempffert: *The Story of American Railroading* in *Popular History of American Invention.*

July 4, 1920—Major-General Gorgas died. He was ex-Surgeon-General of the U. S. Army, and the foremost sanitary engineer of the Panama Canal.

The control of yellow fever by anti-mosquito work was soon demonstrated in a very big way. The Army of Occupation in Cuba took up at once the task of ridding Habana from the disease and incidentally from malaria. How well this was done all the world knows, and the active director of the work, Dr. Gorgas, stepped at once into the light of fame. . . .

It was not long, however, before all of this was overshadowed by the magnificent results by Gorgas in his administration of the sanitary affairs in the building of the Panama Canal. The results of Gorgas' work proved that the tropics may be inhabited by the white race—a fact of tremendously far-reaching importance to the future of the world.

—L. O. Howard: *A Fifty-year Sketch History of Medical Entomology and Its Relation to Public Health* in *A Half Century of Public Health.*

July 7, 1911—The Fur Seals Convention between Great Britain, the United States, Japan and Russia was signed at Washington. It prohibited the killing of fur seals for 15 years and thereafter until a new agreement should be asked by any of the signatory powers. At the present time it is still in force and will remain so indefinitely.—*Bureau of Fisheries, Dept. of Commerce.*

July 8, 1842—An eclipse whose path passed through parts of France, Italy and Austria enabled many detailed observations to be made.

The hour of the commencement of the eclipse drew nigh. More than twenty thousand persons, with smoked glasses in their hands, were examining the radiant globe projected upon an azure sky. Although armed with our powerful telescopes, we had hardly begun to discern the small notch on the western limb of the sun, when an immense exclamation, formed by the blending together of twenty thousand different voices, announced to us that we had anticipated by only a few seconds, the observation made with the unaided eye by twenty thousand astronomers equipped for the occasion, whose first essay this was. . . . But when the sun, reduced to a very narrow filament, began to throw upon the horizon only a very feeble light, a sort of uneasiness seized upon all; every person felt a desire to communicate his impression to those around him. Hence arose a deep murmur. The hum of voices increased in intensity as the solar crescent grew more slender; at length the crescent disappeared, darkness suddenly succeeded light, and an absolute silence marked this phase of the eclipse, with as great precision as did the pendulum of our astronomical clock. . . . After an interval of solemn expectation, which lasted about two minutes, transports of joy, shouts of enthusiastic applause, saluted with the same accord, the same spontaneous feeling, the first reappearance of the rays of the sun.

—Arago, a description of the eclipse of 1842.

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GENERAL SCIENCE

The Scientist

The air is rent with shout and cry,
  And I hear drum and horn;
The purple banners flap and fly,
The mighty emperor passes by
  With curling lips of scorn.

He boasts contempt for little things
  And prates of noble mind,
He has for servants none but kings,
He takes but costliest offerings—
  But the emperor is blind.

His chariot spurns my footsteps slow,
  While I plan a motor car,
He tramples his crops (that I helped
    to grow),
And his rich dyed robes may fold
    and flow,
  But the colors I drew from tar.

I have read the secret of the air
  In a little heap of rust,
And marvels of nature I have laid
    bare
And enriched the world beyond compare
  By a few gray grains of dust.

I tell from scratches on the stones
  The story of the earth,
And what to me are crowns and
    thrones
When I learn from scattered flints
    and bones
  How mankind came to birth!

By soot and graphite, char and coal
  (And the emperor's diamond ring)
By the heaps of slag when I take toll,
This message I read as on a scroll:
  There is no "little thing."

—*Preston Slosson, in The Independent.*

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A locomotive whistle was recently heard by a balloon observer at a height of a mile and a half.

PSYCHOLOGY

Ears Distinguish Close Sounds

How far apart two sounds need to be in order that they may be recognized as two by a person has been studied by Dr. Arthur L. Bennett, of Union College, and his results show that the ears are much more sensitive to sound differences than we often suppose. If the two sounds occur close together they may seem as one, but if one sound comes in one ear, and the second in the other, they may still be recognized as separate, the physicists were told. An electrical device made it possible to have as small an interval of time as a hundred thousandth of a second between the sounds.

Everyone on whom the experiment was tried was able to distinguish the two sounds when they occurred as far apart as a thousandth of a second, while the average could distinguish them at a ten thousandth of a second apart. One person was found, said Dr. Bennett, who could recognize the sounds when less than a millionth of a second apart.

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GENERAL SCIENCE

Icarus in Science

By Arthur Stanley Eddington

In ancient days two aviators procured to themselves wings. Daedalus flew safely through the middle air and was duly honored on his landing. Icarus soared upwards to the sun till the wax melted which bound his wings and his flight ended in fiasco. In weighing their achievements, there is something to be said for Icarus. The classical authorities tell us that he was only "doing a stunt," but I prefer to think of him as the man who brought to light a serious constructional defect in the flying machines of his day. So, too, in Science. Cautious Daedalus will apply his theories where he feels confident they will safely go; but by his excess of caution their hidden weaknesses remain undiscovered. Icarus will strain his theories to the breaking-point till the weak points gape. For the mere adventure? Perhaps partly; that is human nature. But if he is destined not yet to reach the sun and solve finally the riddle of its constitution, we may at least hope to learn from his journey some hints to build a better machine.—Quotation from *Stars and Atoms—Yale University.*

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In Chinese writing each character is made of from one to 54 separate strokes of the brush.

The Problem of Translation—

¶Science, probing the unknown universe, writes its findings in cryptic language. A stellar galaxy shining faintly in the heavens hides its splendor and its immensity in numbers and formulæ; a minute germ has thrust upon it a long Latin name. With the aid of such scientific shorthand and such technicalities, science pushes on to new discoveries and new heights.

¶Yet the facts and the methods of science must penetrate and permeate the whole fabric of civilization if the world is to become an increasingly better place to live in. The man in the street, the child in the school, the merchant in the counting house, the judge on the bench, the priest in the temple, all of those who make the world, must know, appreciate, understand and cherish the spirit of research and the power of thought.

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